

# NWS Y2K End-to-End Testing

*Briefing to Annual  
Family of Services  
Meeting*

**Howard Diamond**  
January 14, 1999



# OVERVIEW

- Y2K Phases
- System Levels
- Date Centric Products
- End to End Testing
- NWS Y2K Home Page

**1996**

J F M A M J J A S O N D



**AWARENESS**

**1997**

J F M A M J J A S O N D



**ASSESSMENT**

**1998**

J F M A M J J A S O N D



**RENOVATION**

**1999**

J F M A M J J A S O N D



**VALIDATION  
&  
IMPLEMENTATION**

# System Levels

- Mission Critical
- Non-Mission Critical
- Non-Information System

# NWS MISSION CRITICAL SYSTEMS

- ASOS - COMPLIANT
- NEXRAD - COMPLIANT
- UPPER AIR - COMPLIANT
- AWIPS - DEVELOP Y2K (BUILD 4.2)
- AFOS - REPLACE (COMPLIANT)
- NWSRFS - COMPLIANT
- NWSTG - COMPLIANT
- NCEP - REPAIR (93% COMPLETE)

# NWSTG

- FOUR SUB-SYSTEMS
  - DATA SWITCH: OS Y2K UPGRADE IMPLEMENTED 7/98
  - IBM 9672 SOFTWARE
    - OS UPGRADE IMPLEMENTED 8/98
    - RENOVATION 100% COMPLETE
    - SERVER FILES & BUFR YR DEPENDENT
  - MONITORING SYSTEMS: OS UPGRADE
  - TELECOMMS: CISCO ROUTERS HAVE CERTIFIED AS Y2K COMPLIANT

# NCEP

- STATUS

- C-90 Model Codes Renovation 93% Complete
- Scientific Workstation Upgrade 75% Complete
- Class VIII (Y2K Compliant) Awarded 10/98
- Porting Codes from C-90 to Class VIII - Not a Y2K Issue
- C-90 Operating S/W Renovation Contingency
- Data Sets Captured For Testing
- Date Formats In Compliance With WMO Stnds.
- Fully Documented Windowing Employed

# AFOS

- **CONTINGENCY FOR Y2K IF STILL FIELDDED AND FOR LEGACY DATA ACQUISITION/DISSEMINATION**
- **AFOS HANDLES Y2K PROPERLY**
- **LEAP DAY SCENARIO - FEP DOES NOT HANDLE 29-FEB; BEP DOES HANDLE IT**
- **“1972” PROCEDURE TO BE INVOKED ON AFOS FOR LEAP DAY SCENARIO**
- **38 NATIONAL AFOS APPLICATIONS PROGRAMS RENOVATED FOR Y2K**



# Limited Date-Centric Nature of NWS Products

- The Vast Majority of NWS Products (e.g., Watches, Warnings, Forecasts, etc.) are NOT Affected by the Year 2000 Change.
- The Date Format in the Header of ALL NWS Products is in the Format of DDHHHH (I.e., 251900 indicates the 25th day of the month at 1900 hours UTC).
- The Use of Year Information in the Body of Products is Limited to a Relatively Small Subset of Products e.g., BUFR, GRIB, and CLIMAT (See Next Slide)

# WMO Character Codes with Year Information

- **J - Last Digit of the Year**

**FM 18 BUOY**

**FM 62 - TRACKOB**

**FM 63 - BATHY**

**FM 64 - TESAC**

**FM 65 - WAVEOB**

**FM 88 - SATOB**

- **JJ - Last Two Digits of the Year**

**FM 47 - GRID**

**FM 49 - GRAF**

# WMO Character Codes with Year Information (cont)

- JJJ - Last Three Digits of the Year

FM 22 - RADREP

FM 39 - ROCOB

FM 40 - ROCOB SHIP

FM 57 - RADOB

FM 71 - CLIMAT

FM 72 - CLIMAT SHIP/NACLI/CLINP

FM 73 - SPCLI/CLISA/INCLI

FM 75 - CLIMAT TEMP

FM 76 - CLIMAT TEMP SHIP

# WMO Character Codes with Year Information (cont)

- **Binary Data Products with Year Information**

**FM 92 - GRIB \***

**FM 94 - BUFR \***

**\* Year2000 coded as Century 20/Year 100;  
Year2001 coded as Century 21/Year 1**

- **Non-WMO Data with Year Information**

**NEXRAD Radar Coded Messages**

**SHEF Data**

# NCEP Test Product Suite

- **NCEP Test Products will Cover a 20-Hour Period and will Consist of:**
  - **WMO GRIB (AWIPS, WAFS, FOS)**
  - **Non-Bulletinized (Raw Direct Model Output) GRIB on the OSO Server**
  - **Facsimile Products (e.g., DIFAX)**
  - **Alphanumeric Bulletins**
  - **Graphics (AFOS and AWIPS)**
  - **MOS (e.g., NGM, MRF, AVN)**

# End to End Testing

- **Validation of System-Level Y2K Compliance Testing Results**
- **Use of a Pseudo-Test Network To Simulate Live Network Employed**
- **Phased-In Building Block Approach**
- **Availability of Y2K Test Data from NCEP FTP Server (140.90.50.22) pub/incoming/Y2K\_files**
- **Partnership with External Customers to Assure Uninterrupted Exchange of Data into the year 2000**

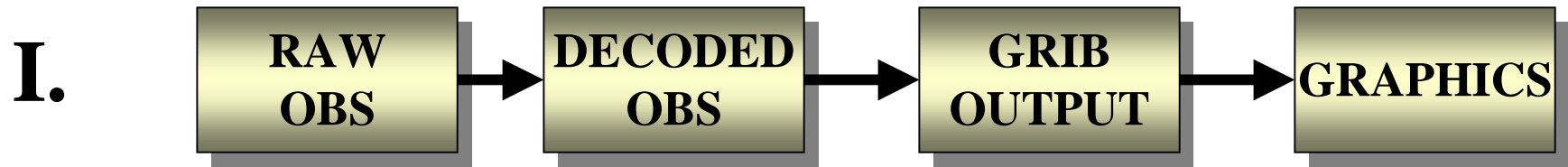
# End to End Testing Strategy

- NWSTG Y2K Test System to “Pump Out” Live Stream of Data (Will Point to Test Y2K GRIB Data at NCEP)
- Can Simulate Y2K Switchover at the 31st of Any Month. NWSTG Y2K Test System Has Already Simulated the Switchover - 3 Scenarios

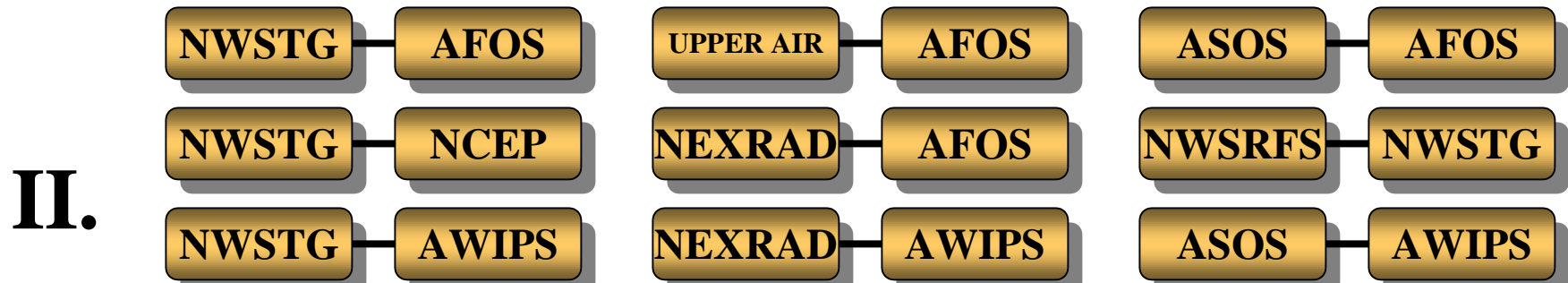
|             |             |             |             |
|-------------|-------------|-------------|-------------|
| 28-Jan-1999 | 29-Jan-1999 | 31-Jan-1999 | 01-Feb-1999 |
| 28-Feb-2000 | 29-Feb-2000 | 31-Dec-1999 | 01-Jan-2000 |
| 31-Mar-1999 | 01-Apr-1999 |             |             |
| 31-Dec-2000 | 01-Jan-2001 |             |             |

# NWS Y2K End-to-End Testing Concept

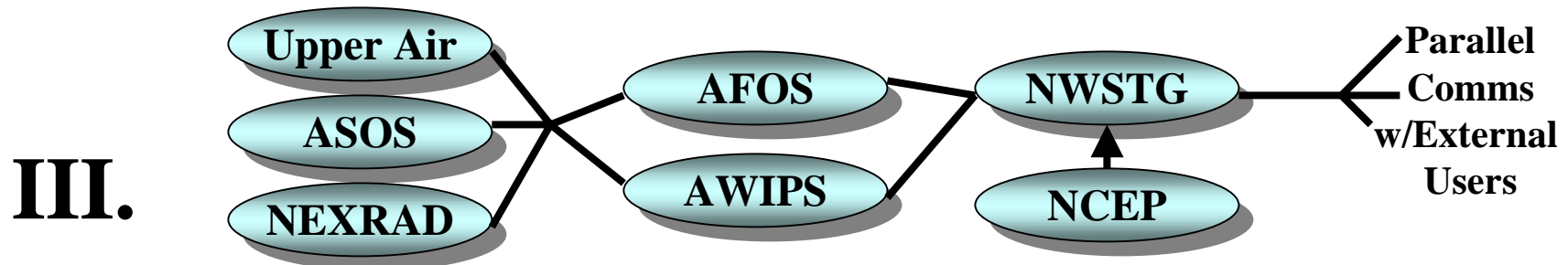
## System Testing (e.g., NCEP)



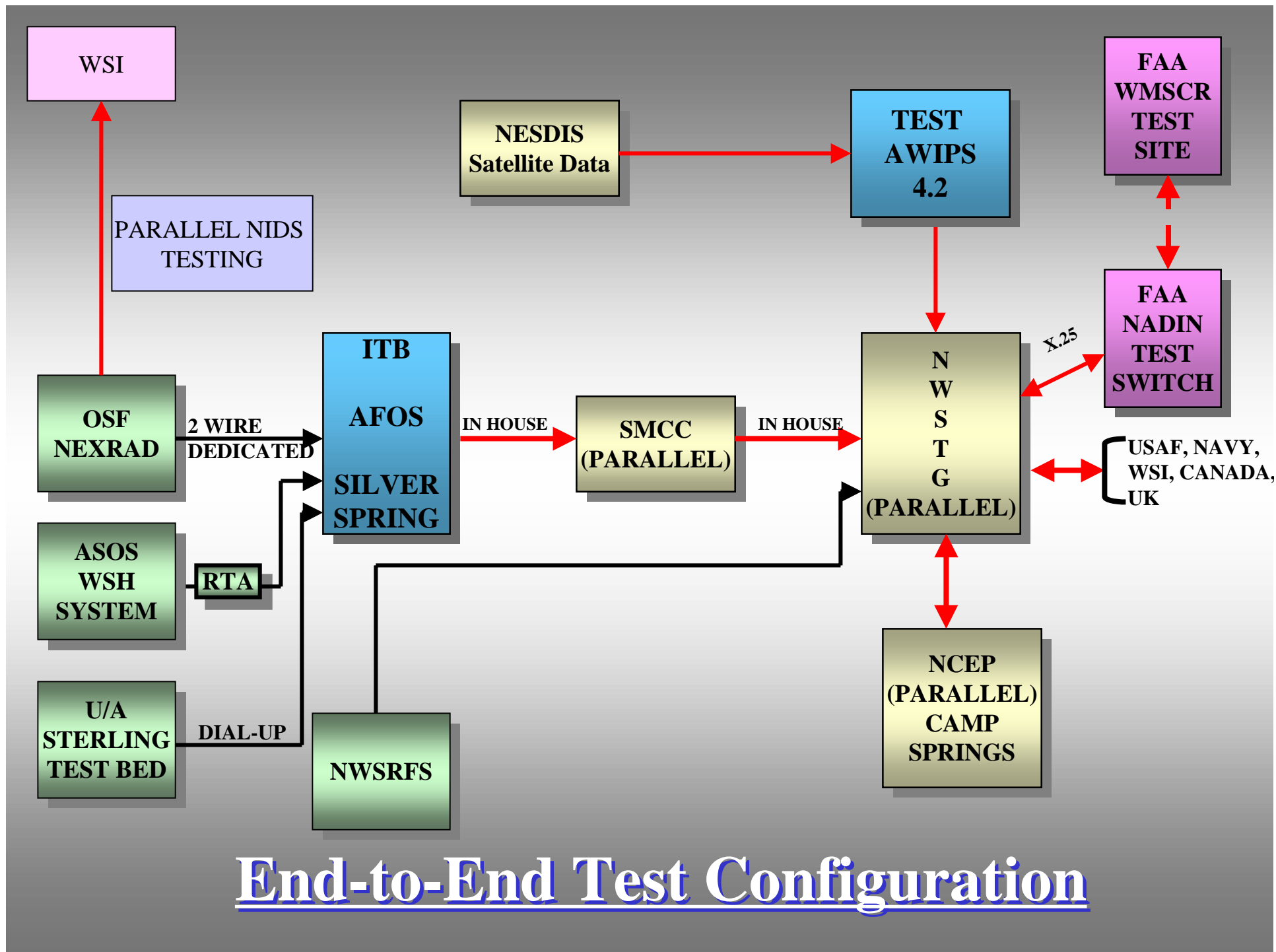
## System-to-System Pair Testing



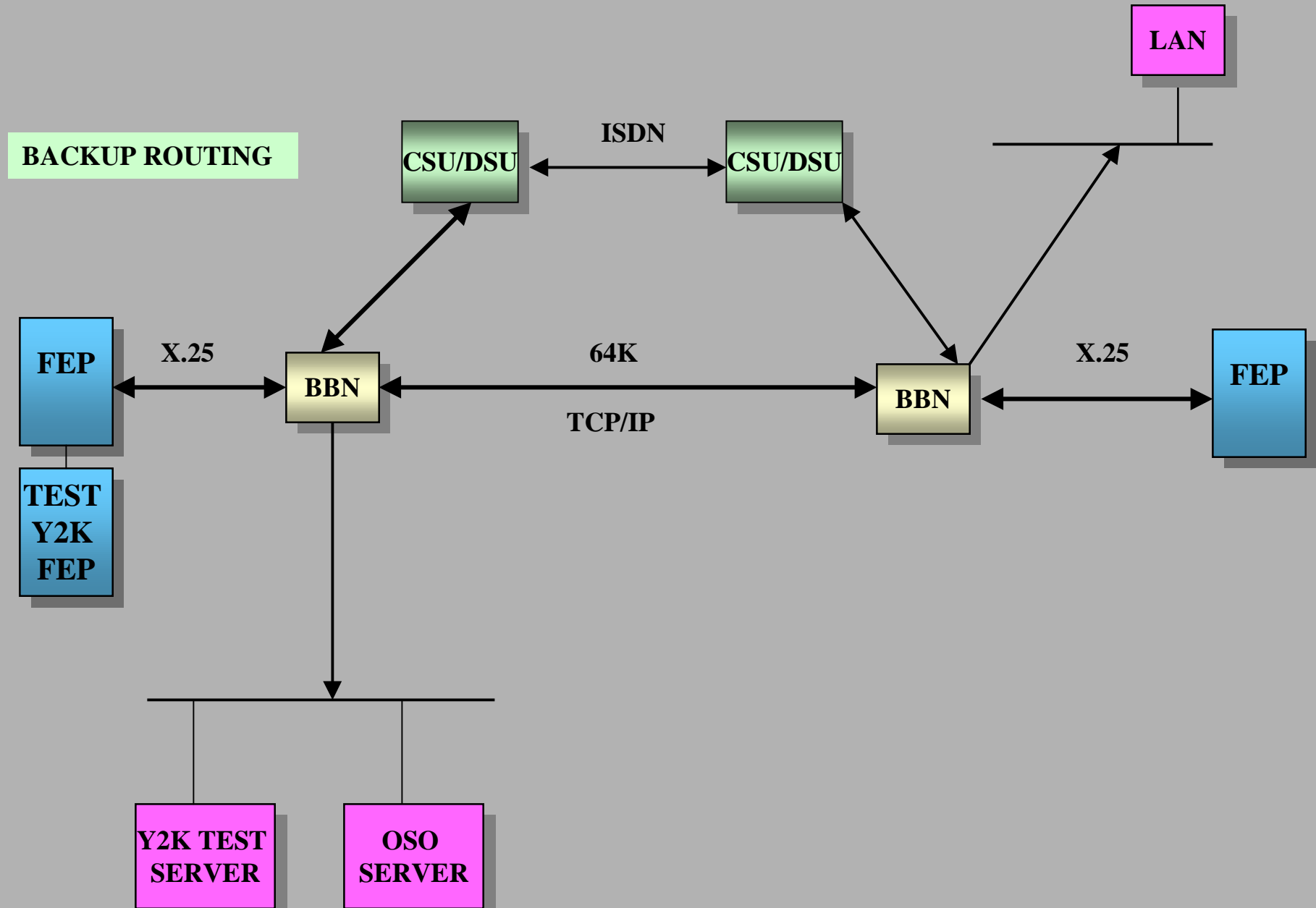
## Pseudo-Test Network







# US-Canada Weather Interface Configuration



# External Interface Contacts

- **FAA WMSCR Test Facility in Atlantic City**
- **FAA WARP Program Office in Washington**
- **FNMOOC in Monterey**
- **Air Force Weather Agency in Omaha**
- **OFCM Special Action Group on Y2K**
- **Global Telecommunications System (Bracknell, UK; Canada, and Tokyo, Japan?)**
- **Air Transport Association**
- **Family of Services Vendors (e.g., WSI)**

# NWS Y2K Home Page

- <http://www.oso1.x3.nws.noaa.gov/y2k>
- News and Notices
- Y2K Test Data
- Plans and Newsletters
- Software Utilities
- Other Y2K Links
- Test Reports
- Quarterly Reports
- General Vehicle for NWS/NOAA Y2K Info



## Quarterly Updates

## Search

## Test Reports

## Quarterly Updates

NWS Home Page

Search

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# **NWS Contact Information**

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